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UNIVERSITY OF NOTTINGHAM

Impact of Mergers and Acquisitions announcement on shareholder value

An empirical evidence of short-term performance from Singapore market.

by

UoN User

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Table of Contents

Abstract

This thesis examines the impact of Mergers and Acquisitions announcements on shareholders wealth of acquirers in Singapore. In detail, this thesis will study the stock performance in response to M&A announcement under three time intervals: pre-announcement period (from day 5 to day 2 prior to announcement day), announcement period (including 1 day prior to announcement day and announcement day) and post-announcement period (from day 1 to day 5 after the announcement). The methodology to investigate this problem of interest is event study. The sample used in this study includes 165 M&A transactions taken place from 2000 to 2007 in Singapore market. Proxy of the market returns for the sample is Singapore Stock Exchange All Share (SGP). The result shows that M&A announcement will affect the shareholder value of acquirers. It is evidenced that during the announcement period from one day before until the day M&A announcements are actually made, shareholders of acquirers will receive significant positive abnormal returns. In addition, this thesis also examines different determinants, which may affect the abnormal returns of acquirers to identify their relationships. They are cross-border/domestic M&As, methods of payment and directions of mergers. Results show that those determinants do have positive impacts on stock performance of acquirers in particular periods.

Introduction

Mergers and Acquisitions, hereafter referred as "M&A", are becoming more popular. Companies normally decide to engage in M&A to get competitive advantage, to improve efficiency and to enhance growth (Cheng et.al, 2007). A common view of M&A transactions is that they enable companies to get more benefits from the combined companies than total value of individual companies before M&A engagement. The benefit can be obtained from optimization of allocation of assets, increase market competition ability, expand corporate scale and create shareholder wealth. M&As now are not only interesting to companies, but also attract government in local economies.

M&A originates for more than four decades, and becomes very common with developed countries in North American and European markets such as U.S. or U.K. However it only becomes popular for Asian markets since 1997, after the Asian financial crisis originated from Thailand and the smash of IT bubbles in 2000 (Wong et al., 2009). M&A activities in European and North American markets now are entering the mature stage. Nevertheless, M&A activities in Asian market are still in infant stage. That is why; there are many studies about M&A activities for European and North American markets; but only few studies conducted for Asian market. Therefore, that raises a need to conduct a research for this market. Moreover, there are two important differences when comparing US and developed countries with Asian emerging economies. Firstly, US develops a strong legal system to protect the benefits of shareholders and welfare of consumers, while emerging economies have a poor legal system and weak enforcement of existing laws (La Porta et.al,1999). Secondly, the differences in culture and governance cause differences in organizational structures of companies (Kwok and Tadesse, 2006; Denis and McConnell, 2003). As a result of these differences, those hypothesis and results obtained from studies of developed countries might not be able to represent for Asian markets. These reasons inspire me to conduct a research on M&A activities in Asian market to examine the validity of the hypothesis and previous studies on this market.

Most empirical studies conclude that M&A announcements would create value for shareholders of target companies and combined companies. Some of those studies can be listed are Frederikslust, et.al (1999), Berkovitch and Narayanan (1993) or Schwert (1996), etc. On the contrary, the impacts to shareholders of acquirers are mixed. Some empirical studies of such as Wong, et.al (2009), Bradley, et.al (1988) found that M&A announcement would generate statistically significant positive abnormal returns to acquirers' shareholders. On the other hand, a few studies show that M&A announcements will cause a negative or zero abnormal returns to shareholders of acquirers such as Sirower (1994), Morck, et.al (1990) or De Bruijin, et.al (1994), etc.

There are two issues currently existing. They are there are few studies about M&A activities for Asian market and the shareholder value of acquiring companies in M&A deals as a result of M&A announcements are still unclear. These two reasons inspire me to carry out a research about value of acquirers' shareholders in an Asian country. In detail, this thesis will use a sample of acquirers in a specific country in Asia, which is Singapore, to figure out whether announcement of M&A will generate value for acquirers' shareholders. The reason I choose this country because it is a well developed and the biggest stock market in South East Asia, where I am living.

Previous researchers have conducted their studies for either long run or short run. In this study, I will conduct the research for the short run. In doing this, I can avoid the risk of cofounding events, with which long run studies usually face (Shleifer & Vishny, 2003). On the other hand, studying short run effect of M&A announcement is interesting because share prices will reflect the expectation of shareholders about companies' prospective.

Besides examining the impact of M&A announcement on stock performance in the short run, this thesis also examine the effects of factors, which may affect the performance of stocks. Previous studies have examine few determinants such as domestic/cross-border M&As (difference in acquirers' returns due to domestic and cross-border target companies), methods of payment (effect of payment types on acquirers' returns) and direction of merger (explain any effect may have if acquirer and target are in the same industry or in different industries). Hence, we will re-examine those determinants to see whether they also impose impacts on Singapore M&A transactions.

In this thesis, we hope to find the answers for the following research questions:

- Will the M&A announcement create or destroy shareholder wealth of Singapore acquirers in short run?
- How is the relationship between three factors (domestic/cross-border M&A, methods of payment, directions of mergers) and the performance of stocks?

When answering these questions, hopefully, it will help shareholders of acquirers in deciding whether they should invest in those companies when M&A deals are announced. Moreover, it gives managers the idea of whether or not companies should engage in M&A activities and ability to predict returns based on available information.

The thesis is organized as follow. Part 1 will discuss definition of M&As and motives for M&A activities. Part 2 is about literature reviews and hypothesis development. Part 3 describes the procedure of gathering the sample and methodology, which is used to process the data. Part 4 includes data description and

presents the results after applying methodology. Part 5 will report the obtained result. The last part is used to make conclusion on those obtained results.

Theories, Literature review and Hypothesis development

1. Definitions for M&A and motives for M&A activities

a. Definitions of Mergers and Acquisitions

Merger is a transaction when two companies decide to combine their operations. As a result of a merger transaction, two individual companies cease to exist and a new combined company is created. Acquisition is a transaction where one company takeovers the operation of another company. The company, which is acquired, is called "target company" and the company, which acquire the other company, is called "acquirer". The target company is therefore become a part of the acquirer.

In many studies, the term "mergers" and "acquisitions" are used interchangeably since the net result is often the same (Sherman and Hart, 2006). Moeller at.al (2004) defines Mergers and Acquisitions as a transaction in which two individual business entities having separate ownership combine and operate as one entity after the transaction. Because of that, M&As in this thesis will be used interchangeably as indicating all transactions in which the businesses of any two companies will be combined through the purchase the majority of shares or a merged activity.

In theoretical aspect, an M&A deal normally indicates that the controlling interest amount to 50% of voting shares plus one in the newly formed business (Ma, et.al, 2009). Ma, et.al (2009) also define controlling interest as the case where a shareholder (or a group of shareholders) holds a sufficient number of voting shares so that no coalition of shareholders can oppose a motion successfully. In practical aspect, a controlling interest is much less than that because it is hardly that 100% of shareholders will be in elections when shareholding is dispersed.

This thesis will only focus on the majority M&A deals. In that sense, this thesis follows definition of M&A transactions of Moeller et al. (2004), saying that a M&A deal is a deal from which a combination of two individual entities takes place or the acquirer in the deal acquire from less than 50% of the holdings to more than 50% or to 100% of stocks (or assets). Therefore, all transactions that satisfy one of the following definitions are included in the sample of this thesis. First, an M&A transaction is taken place when all assets of a company, subsidiary, division, or branch are acquired. Second, acquirers owed less than 50% of voting shares and are looking to acquire 50% or more, but less than 100% of voting

shares in the target companies. Last, two companies combine together or 100% of stocks of a private or public company are acquired.

b. Motives for Mergers & Acquisitions

Companies engage in M&A activities with the aim to improve their performance. However, not all M&A deals can exhibit improvements after M&As. There are several explanations for the M&A engagement decisions and the poor post-performance of companies:

i. Neoclassical theory

In modern finance theory, managers are responsible for maximizing shareholders wealth. Hence, a manager should only engage in an M&A transaction if the deal is able to create value for his shareholders. Managers will reject any M&A deal, which is unable to achieve this objective. Under this theory, a M&A transaction should generate economic gains to both companies or at least generate non-negative returns to add value for shareholders (Baradwaj et.al, 1992). In other words, M&A transactions should help companies create synergy. Synergy is achieved when the value of a post-merger company is greater than the combined value of each individual company before M&A engagement. As noted by Bruner (2004) "true synergies create value for shareholders by harvesting benefits from mergers that they would be unable to gain on their own". Synergy can be categorized into two types, which are operating and financial synergy (Gaughan, 2011, p.133).

Operating synergy can be achieved through revenue enhancement or cost-reduction. Revenue enhancement refers to new opportunities that both companies may have when they are combined. These opportunities are seen from sale or marketing point of view. For instance, by engaging into M&A transactions, companies are able to get benefits from reduced competition and higher market share. As a result, companies will have greater pricing power and earn greater margins and operating income. Operating synergy can come from M&A transactions between two companies with two functional strengths such as good product line and good marketing skills. It can also be achieved through the lend of one company's computation to the upcoming product line. Revenue enhancement is more difficult to achieve rather cost reduction synergy, which will be discussed shortly, because it is harder to quantify and build it into valuation models (Gaughan, 2011, p.134). Cost reduction can be achieved through economies of scope, economies of scale, or reductions in assets (Porter, 1985). For example, economies of scale refer to the reduction in cost per unit by production of larger size or scale of products. In other words, if a company produces more products, the fixed costs will be spread over more units, and as a result, reduce the cost per unit. In addition, cost reduction can be achieved through specialization of labour and

management, efficient use of capital equipment, but this might not be possible if companies produce at low output levels (Gaughan, 2011, p.135)

M&A transactions create financial synergies to combined companies in terms of higher cash flows or lower cost of capital. Financial synergies may help companies reduce default risk. If one company has a probability to go bankrupt, creditors will consider this company as a risky company and they will not want to provide capital for this company or may lend at a high interest rate. By engaging into a M&A deal with another solvent company, the solvent company may cover the decline in that company's cash flow. As a result, the combined company might be saved from being default and save creditors from suffering losses. It is referred as debt coinsurance. The combined company would then be seen as less risky. As a result, M&A engagement would reduce borrowing costs and diversify equity risk for shareholders, according to Maquieira et.al (1998). Lewellen (1971) uses portfolio distribution theory to propose a rational for M&As, which is the coinsurance hypothesis. He explains that M&A transactions between two or more companies, whose cash flows are less than perfectly correlated, will reduce the probability of joint financial distress. Therefore, this will increase debt capacity for combined companies and lead to greater leverage. Consequently, combined companies can increase the benefits from tax shield and create additional values for shareholders.

ii. Behavioural hypothesis:

Under this hypothesis, agency and hubris theory play important roles.

- **Agency theory**

In contrast to neoclassical theories with the aim of maximizing the shareholder wealth, agency theory states that managers will act in the ways that maximize their own interests and engage in "empire building". According to free cash flow theory, which is a part of agency theory, managers may invest free cash flows, which should be paid out as dividends to shareholders, into negative NPV projects such as acquisitions, if these projects can maximize their own interest (Jensen, 1986). This is because if managers pay cash to shareholders, it will reduce the power of managers by reducing the amount of resources over which managers have control. Moreover, Amihud & Lev (1981) and later Black (1989) argues that in conglomerate M&As, managers will face with employment risk because their earnings and employment are highly correlated with company's risk. Therefore, managers will engage in M&A transactions to reduce their risk rather than maximizing shareholder value. In addition, managers may prefer to maximize corporate growth rather than corporate value since the managers' profits such as salary, bonuses, promotions or status tend to increase in line with corporate size (Cheng, et.al, 2007). Firth (1991) conducted a test to find the relationship between executive reward and M&As. He found that if

shareholder value increases, the executive rewards will also increase. On the other hand, if shareholder value is destroyed, executive rewards still seem to gain from M&As. This research found an interesting point that managers seem to act for their own utility rather than for shareholders.

- **Hubris theory**

The third theory explaining the motives of companies in M&A engagement assumes that the managers are non-rational; they make mistakes when evaluating the target companies due to their over self-confidence (Roll, 1986). Managers of acquirers over-estimate the value of the target companies; hence, they may pay higher premium to the target companies. Hence, the share prices of the target companies would increase, as these shareholders are ready to transfer their shares in response to high premium offered by acquirers. That would lead to a gain in the value of target companies. On the other hand, shareholders of acquirers would suffer a capital loss since they have to pay extra amount due to over-estimation. Consequently, the drop in share price will drive down the value of acquirers. As a result, the higher gains of target companies are compensated by the lower gains of acquirers, which lead to combined effects being zero (Berkovitch and Narayanan 1993).

There are several studies supporting the concept of hubris theory, which show evidences of overpayment made by acquiring managers. They are studies conducted by Dodd and Ruback (1977), Maquieria et.al (1998) or Sudarsanam et.al (1996), etc.

The negative impacts of M&A announcements can be explained through two hypothesis of behavioural hypothesis. First, it may come from the fact that managers realize large personal gains, which can be obtained through empire building. With free cash flow, they are likely to engage in M&A transactions rather than paying out cash to shareholders, even there are few profitable investment opportunities (Masulis, Wang & Xie, 2007). Second, mangers may make mistakes when they evaluate the deals. Overvaluations are often observed in M&As of private-held companies. That is because the information about the private-held target companies is more difficult to get rather than if the target companies is public (Officer, Poulsen & Stegemoller, 2009).

In sum, three motives discussed above will lead to different expectations about the abnormal returns to shareholders of target companies and acquirers. Under synergy hypothesis, abnormal returns are expected to be positive to shareholders of target companies and acquirers. Under agency and hubris theory, shareholders of acquirers are expected to experience negative abnormal returns, while shareholders of target companies are expected to experience positive abnormal returns. Therefore, shareholders of target companies seem to be more beneficial than shareholders of acquirers if companies decide to engage in M&As.

2. Literature review and Hypothesis development

a. Impact of M&A announcement on shareholder wealth

Existing evidence on Western market

A number of studies have conducted to estimate the effects of M&A announcements on stock performance of acquirers and target companies. Most empirical studies agree that M&A announcements will generate significantly positive abnormal returns to shareholders of target companies. Some of those studies are Schwert (1996), Jarrel &Poulsen (1989). Using a sample including 1814 US takeovers in the period from 1975 to1991, Schwert (1996) found abnormal returns of 10.1 % for shareholders of target firms. Similarly, Jarrel &Poulsen (1989) reported abnormal returns equal to 28.99% to the shareholders of target companies when examining a sample of 526 M&A transactions of US firms in the period from 1963 to 1986. Jensen & Ruback (1983) summarized 13 studies and they concluded that M&A announcements generate significant positive abnormal returns to shareholders of target companies. The increase in stock price of target companies is ranging from 16.7% to 34.1% surrounding M&A announcements.

In addition to significantly gains for shareholders of target companies, most studies agree that combined companies will gain from M&A announcement as well. One of those studies is conducted by Moeller, et al. (2005). They investigated M&A transactions in the period from 1980 to 2001. They examined three-day cumulative abnormal return for acquiring companies and found that there is positive cumulative abnormal return for shareholders of acquiring firms, except for 2 years out of 22 years analysed. The abnormal return synergy gain (the combined value of acquiring and target companies in percentage returns) is slightly positive. This finding is consistent with findings in some other studies conducted by Mulherin and Boone (2000); Servaes (1991); Bradley, et.al (1988).

In contrast to the above findings for shareholders of target companies and combined companies, the effect of M&A announcements on shareholder wealth of acquirers are quite ambiguous. Some studies result that M&A announcement also create wealth to shareholders of acquirers. Dodd and Ruback (1977) conduct a study for 169 tender offers, which examines the abnormal returns for both target and acquirer companies around M&A announcement day. They split their sample into successful acquirers and unsuccessful acquirers. They found that shareholders of acquirers are beneficial from M&A announcement. If the deal was successful, it brings about 2.83% statistically significant for shareholders of acquirers. On the other hand, if the deal was unsuccessful, shareholders of acquirers earn a small insignificant abnormal return of 0.58%. This finding is later supported by Asquith (1983), which found a 0.7% and 3.48% abnormal return to unsuccessful and successful acquirers respectively. In addition, Bradley et.al (1988) conduct their study

for US sample, including 161 tender offers. They concluded a significant abnormal return of 0.97% for shareholders of acquirers. On the other hand, some other studies show that M&A announcement will generate negative or insignificant abnormal returns to shareholders of acquirers. Franks et.al (1991) conduct a study for their sample including 399 US M&A transactions during the period between 1975 and 1984. They found a small insignificant negative return (-1.02%) to shareholders of acquirers for their sample. Likewise, Mitchell and Stafford (2000) report small negative abnormal returns for US acquirers during the period 1953 - 1993.

Existing evidence on Asian market

Wong (1999) studied M&A announcement effects on security prices of bidding companies with a sample consisting of all public companies in Hong Kong from 1990 to 1998, irrespective of whether the transactions are successful or not. The result shows a negative impact on the security prices and shareholders are considered as unable to gain their wealth from M&A announcement. Supporting for this finding, Mat-Nor (1993) conducts his research for M&A deals in Malaysia during the event window of 41 days centred on the announcement day. He concludes that there is a negative effect around M&A announcement.

On the other hand, Ma, et.al (2009) analysed M&A announcement effects on shareholder wealth in ten Asian countries. By examining 1477 M&A deals in 10 Asian emerging countries from 2000-2005, they found that M&A announcements create positive cumulative abnormal returns in different windows. Wang (2009) did her study for listed companies' stocks. She also got the result that both bidding and target firms earn positive returns from the M&A announcements. Wong and Cheung (2009) examine the impact of M&A announcement on their sample, which includes 658 M&A deals in China, Japan, Hong Kong, Singapore, South Korea and Taiwan. They conclude that corporate takeover is seen as good news for the shareholders of bidding companies. In contrast, it is not seem to be good news for shareholders of the target companies. In addition, they found that abnormal return for shareholders of acquiring firms in the period after official announcement depends on the type of acquisitions.

Different empirical evidences draw different conclusions. Hence, the impact of M&A announcement on value of shareholders of acquirers seems to be ambiguous. Therefore, it seems that we are unable to apply those results for M&A transactions in Singapore. Due to this reason, M&A announcement impact on shareholder value in Singapore needs to be examined further. Most existing evidences show that shareholders of acquirers will likely experience negative or insignificant abnormal returns during M&A announcement day. Therefore, our first hypothesis is:

Hypothesis 1: Shareholders of acquirers receive negative or insignificant abnormal returns surrounding M&A announcement day.

b. Determinants of stock performance

i. Impact of Domestic/Cross-border M&A on stock performance

Due to the explosion of globalisation, companies want to expand their business to many countries. One way, which can help companies easily enter into new markets, is engaging into M&A agreements with local companies since it may reduce barriers to entry into international markets. This kind of M&A is called cross-border M&As. In theory, cross-border M&A transactions are expected to generate value for shareholders' acquirers since the acquirers can exploit the target companies' resources to take advantage of market imperfection (Buckley and Casson, 1976 and Morck and Yeung, 1992). According to Morck and Yeung (1991,1992), Kang (1993), Markides and Ittner (1994); cross-border M&As will provide benefits of internalisation, synergy and risk diversification. Therefore, they are expected to create value for shareholders of both acquirers and target companies. In the contrary, from the perspectives of acquirers, they normally do not fully understand about the target country and target companies. This would potentially lead to unsuccessful M&A transactions and wrong valuation of target companies, especially in the case that those target companies have high level of intangible assets (Reuer et. al, 2004). Therefore, due to information asymmetry, acquirers pay higher bid premiums and acquisition costs, which will then benefit those target companies in short run and generate negative or zero wealth effect for shareholders of acquirers (Datta & Puia, 1995 and Reuer et. al, 2004). In addition, cross-border acquirers may face with more challenges than domestic ones such as differences in political and legal systems or social and cultural norms, language barriers and history as indicated by Shimizu et al., 2004. These differences may hinder the performance of cross-border companies and drive down the value of their shareholders.

Chang and Chen (1995) examine 70 US target companies in cross-border M&As during three days surrounding the announcement day. By investigating in their share prices, they found that US target companies earn positive abnormal returns after being acquired by foreign companies. Agree with that finding, Harris and RavenScraft (1991) find significant higher positive abnormal returns for 1273 US target companies from 159 cross-border acquisitions than domestic M&As in the period from 1970 to 1987. Eun et. al (1996) examine abnormal returns for shareholders of US target companies from 1979-1990. They found a significant positive abnormal return of 37.02%. Hence, these empirical evidences support for the belief that cross-border M&As generate positive abnormal returns for shareholders of target companies as similar as domestic M&As do. Moreover, Harris and RavenScraft (1991) find that

cross-border M&As even generate higher significantly positive abnormal return for target companies' shareholders than for domestic M&As.

On the contrary, whether the abnormal return generated by international M&As create value for shareholders of acquirers has not been confirmed yet. Doukas and Travlos (1988, p.1166) examine the effect of cross-border M&As for 301 US acquiring frims engaged in M&A transactions during the period from 1975 to 1983. They found an insignificant positive abnormal return of about 2% for shareholders of acquirers in the period of 21 days, centred on the announcement day. Likewise, Mathur, et.al (1994, p.112) studied a sample of US data for the period from 1984 to 1988, they showed that foreign bidders generate insignificantly negative cumulative abnormal return in all three time intervals (-1,0), (+2,+6) and (+1,+15) day period. Eun et.al (1996) found a significant negative abnormal returns for US acquirers of -1.2%. Conn (2003, p.1) reviewed 15 studies for US and UK M&A transactions. He reports a dominance of negative or zero cumulative abnormal return for acquirers. Corhay & Rad (2000) examined international M&As using a sample including foreign M&A transactions by Dutch companies during the period from 1990 to 1996. Their results report small negative abnormal returns, but insignificant to acquirers engaged in transactions for target companies located in Europe; while M&A transactions, which target companies are in the US, show significant abnormal returns of 4.83% to the Dutch acquirers at the time of announcement. In a study by Moeller & Schlingemann (2005), they investigate UK and US acquirers and found that domestic announcements generate more wealth as compared to cross-border announcements.

Once again, the impact on shareholder value of acquirers as a result of domestic or cross-border M&As surrounding M&A announcement is still ambiguous and needs to be examined further. Follow most of previous studies, we suppose that cross-border M&A announcements will create negative or insignificant abnormal returns and domestic M&A announcements will produce positive abnormal returns for shareholders of acquirers.

Hypothesis 2: Cross-border M&As generate negative or zero abnormal returns to shareholders of acquirers, while positive abnormal returns are expected from domestic M&A transactions.

ii. Impact of means of payment on stock performance

Acquiring companies have three methods of payment for the target companies. They can pay target companies in cash or shares or a combination of them. In a cash purchase, acquirer will make an offer and acquire shares of target companies, in return pay them in cash. In share swap, the acquirers will acquire the shares from shareholders of the target companies and in return offer them their own shares. Choosing any kind of those methods may affect the performance of combined firms. Myers and Majluf (1984),

Fishman (1989) and Eckbo and Thorburn (2000), based on asymmetric information, suggest that an acquirer will pay the target companies in shares if they believe their shares are overvalued or there is high uncertainty on the target's value. In contrast, they may use cash to pay target companies if they believe their shares are undervalued or there is high uncertainty on the acquirer's own value.

Huang and Walking (1985) provide reasons for preferring cash offers. First, using stock offer will contribute to dilution of reported earnings and welfare of shareholders. Second, in real market, cash offer is faster and more certain. The reason is if acquirers use stock offer, they need to wait for several months to get approval from Securities and Exchange Commission. Hence, it will slow down the progress of M&A transactions and increase the uncertainty of the stock market. Nevertheless, given acquirers have limited cash and liquid assets, cash offer will normally require debt financing. Debt financing, therefore, create financial distress for the firms and may limit cash flows for other future investments. As a result, it will affect the shareholders' value. In that sense, cash offer is only suitable for small M&A transactions or those companies, which have abundant cash. Moreover, according to Rappaport and Sirower (1999), offering cash as a mean of payment, acquiring shareholders are taking entire risk that expected synergy value will not materialize. Meanwhile, with transactions financed by stocks, this risk is shared with selling shareholders according to the percentage of combined company that acquiring and selling shareholders own.

Wansley et. al (1983) test for difference in returns for target companies between using cash or stocks to finance for M&A transactions. They found that those target companies using cash finance would gain, on average, 33.54% abnormal returns around M&A announcements. Meanwhile, target companies using stock finance receives only 17.47% abnormal returns. Similarly, Huang & Walking (1987) in their study, document that an average abnormal return of 29.3% is realized for target companies in M&A transactions using cash finance, while only 14.4% abnormal return is recorded for M&A transactions using stock finance. Moreover, they also find that M&A transactions using mixed payment will bring about 23.3% abnormal returns for shareholders of target companies. Consequently, target companies seem to be more beneficial in M&A transactions financed by cash than those financed by stocks or mixed offers.

Most of empirical studies conclude that acquirers using cash offer will generate better returns for shareholders than those using stock offer. Travlos (1987) documented a significant difference between cash and stock M&As when investigate 60 acquirers. Acquirers using stock offer experience a significant negative cumulative abnormal return of -1.47%, while acquirers using cash offer earn an insignificant positive of 0.24% cumulative abnormal return. Likewise, Brown & Ryngaert (1991) achieve the same

result when examining 268 M&A transactions. They reported an insignificant positive abnormal return of 0.06% to M&A transactions with cash offers, while a significant negative abnormal return of -2.74% with stock offers. The mixed offer between cash and stock generate a significant positive abnormal return of 2.48%. Wansley et.al (1983) studied 203 companies listed in the Federal Trade Commission large merger series in the period from 1970 to 1978. They found that cumulative average abnormal return generated for acquirers of cash mergers are 11% greater than that of stock mergers. The study of Huang and Walking (1985) also supports to this finding.

Despite many studies indicates the underperformance of stock offer in relation to cash offer, the number of M&A transactions using stock offer increase considerably and become more popular since 1990's. It raises concerns that current hypothesis is no longer valid. Indeed, Chang (1998) examines returns of acquirers around the announcement day of a takeover proposal when target companies are privately held. He concludes that there were no abnormal returns for bidders using cash finance, but positive abnormal returns for bidders using stock offer. Mushidzhi and Ward (2004) studied the impact of 49 acquisitions in the period from 1998 to 2002 for those acquirers listed on JSE. They concluded that there is no significant difference for shareholders of companies financing the transactions by cash or shares.

Due to this variation, we need further study for the impact of methods of payment on shareholder value of acquirers surrounding M&A announcement day in Singapore. Following those results obtained from the most of previous empirical studies, it is expected that cash offer will generate positive abnormal returns, while other methods of payment will generate negative abnormal returns to shareholders of acquirers. Our hypothesis is:

Hypothesis 3: Acquirers with cash payment in M&A transactions will generate positive abnormal returns, while those with other methods of payment will generate negative abnormal returns for their shareholders

iii. Impact of direction of M&As on stock performance

If the acquirer and target company operate in a similar line of business, this M&A transaction is classified as horizontal M&A. In horizontal M&A, positive abnormal returns are generally recognized due to the possibilities for synergy. The expected value can come from improvement from management and operation (Eriksson & Hogfeldt, 1998). Besides that, market theory states that horizontal M&A can help combined companies save costs and enter into new market to make use of overcapacity and to reduce competition (De Jong, 1998).

Vertical M&A is the combination between two companies at different stages of production (Brealey,2008, p.883). The acquirer will acquire backward in its source of raw materials or forward in the direction of ultimate consumer. With vertical M&As, companies can reduce costs through backward merger, and earn higher margins through forward merger. However, according to Morck et. al (1990), synergy effects are hardly realized because they lack economies of scale and there are some problems of integration. Therefore, shareholders of vertical M&As are expected to experience negative abnormal returns.

Conglomerate M&As are transactions combining two companies in unrelated lines of businesses (Brealey,2008, p.883). The motive for this type of M&As is diversification. Managers want to spread the risks by being active in different markets. This type of M&A are expected to generate negative stock reactions because shareholders of acquirers can spread their risks by themselves without incurring any cost, which arises from M&As. Therefore, empirical evidences suggest that conglomerate M&A transactions provide the lowest returns for shareholders because no synergy will be realized (Morck et.al, 1990). Berger and Ofek (1995) found that the average loss in value from diversification M&As is about 13-15%.

Some empirical studies support that the degree of industry relatedness between acquirer and target companies is positively correlated with returns. Bosveld, Meyer and Vorst (1997) examine Dutch M&A transactions in the period from 1979 to 1995. They find both acquirer and target companies show positive CAR in horizontal M&A transactions. Maquieira, Megginson and Nail (1998) report insignificant negative returns to shareholders in conglomerate M&As, while a significant positive abnormal returns in non-conglomerate M&As.

Shareholders of acquirers normally will receive positive abnormal returns as a result of M&A announcements if the target companies are in a similar line of business as acquirers; while receive negative or insignificant abnormal returns if M&A transactions are vertical or conglomerate. Therefore, I am also expected a positive abnormal returns to shareholders of acquirers in horizontal M&As and negative abnormal returns in vertical and horizontal M&As for my sample.

Hypothesis 4: Horizontal M&A transactions will generate positive abnormal returns, while vertical and conglomerate M&As create negative abnormal returns for acquirers*' shareholders*.

Data and Methodology

1. Data selection

This thesis investigates the impacts of M&A announcements on the value of shareholders of acquirers in Singapore during the period from 2000 to 2007. Therefore, this thesis will use the sample of M&A transactions in Singapore market downloaded from Bloomberg, which is a large database for M&A deals. Criteria for M&A transactions to be included in the sample are:

- M&A deals in Singapore market which are announced during the period between 01/01/2000 and 31/12/2007
- All M&A deals included in the sample must be completed. Any deal, which has not been completed, was removed from the sample.
- Acquirers must have their shares listed on the stock exchange

After downloading data from Bloomberg, we do some filters for preliminary sample:

- Financial institutions such as banks or insurance companies are excluded from the sample due to the fact that these financial institutions have differences in accounting and regulations compared to traditional companies.
- We will focus our study on majority M&As. That means the acquirers must acquire 50% or higher of the shares in the target companies in each deal to be included in the sample.
- Announced values of M&A transactions must be available and any transaction, whose value is less than S$1m, is excluded from the sample.
- Any acquirers, which engaged in more than one M&A deal during one year, were eliminated to avoid confounding events. Empirical evidence shows that capital gains are larger in multiple M&As (Jarrel and Poulsen, 1988; Bradley et al, 1988).
- All M&A transactions, which lack of ISIN information (International Securities Identification Number) for acquirers, are eliminated from the sample.
- Information about methods of payment, country of both acquirer and target companies, and industry group must be available for the second part of this thesis, which investigate the relationships between potential determinants and abnormal returns for acquirers' shareholders.
- Acquirers, who do not have 205-day share prices before the announcement day and 5 days after announcement day, will be removed from the sample.

- Some of M&A announcements in this sample are made during days when the stock market is not traded. Therefore, there are missing data for those days. As proposed by Peterson (1989), these announcement days have been chosen to the following day when the stock market is opened.

In order to examine the reaction of Singapore acquirers' stock prices against the M&A announcement, we need to collect the daily share prices of Singapore acquiring companies. These daily share prices can be collected from Thomson Reuters Datastream. Thomson Reuters Datastream is a reliable and trusted source and one of the largest financial statistical databases – including indices and economic data, fundamentals, estimates, etc. It provides quantitative data for over 175 countries and 60 markets. Information on daily returns on market is also collected from Thomson Reuters Datastream. Following study of Wong et.al (2009), Singapore Stock Exchange All Share (SGP) is employed as a proxy for market return. After filtering the sample, there are 165 M&A transactions remaining that satisfy all set criteria.

2. Methodology

There are some methodologies to measure the M&A's profitability. Two most common ways are event studies and accounting studies. Event studies examine the abnormal returns that shareholders may earn in the period surrounding the M&A announcement. Accounting studies are based on the financial statements or accounting numbers of acquirers and target companies to identify whether there is any impact after M&A engagement. However, this methodology is less common when evaluating the effects of M&A announcement on shareholder wealth surrounding announcement day than event studies due to several reasons.

According to Bishop et.al (1987), it takes several years for financial effects of M&A transactions to be reflected in accounting figures and hence accounting figures should be examined over a long period of time. This means that accounting method cannot identify the effect of M&A announcements on shareholder wealth in several days or weeks surrounding announcement day. Moreover, different companies may use different accounting techniques, so the use of accounting method to measure abnormal returns is questionable (Dodd, 1976). For example, some companies may use cash basis to record their income and expenses, while other companies may use accruals basis to record these variables. Therefore, the results may be different from each other and are not comparable. In addition, managers can manipulate accounting data. Supporting this point, Healy et.al. (1992) states that accounting data can be influenced by managerial decisions. Hence, using accounting data to examine the effect of M&A may not give a true and fair view. Lastly, accounting figures are historical data, which record all activities in the past. It does not reflect the expectation of shareholders about the impacts of M&A announcements in the

future. Hence, these figures neither reflect real asset values nor represent the market value of a company (Bishop et.al, 1987).

Event studies are more common in use than accounting studies to measure the impacts of M&A announcement in the short run. The reason why this methodology receives support from researchers is that the event can be dated precisely, so the share prices will react to this new information immediately. Moreover, this methodology reflects the expectation of shareholders about the future of companies. That is why; in this thesis, I will choose event study methodology developed by Brown and Warner (1985), which is the most popular way for studying share price reactions due to M&A announcements.

Event study framework

Event study methodology is a common method to measure the performance of companies as the result of an event. This event could be issues of new debts, earning announcements or M&A announcement, etc. The objective of event studies is to examine the impact of an event on the value of a firm, which can be measured by the change in stock prices. Event study methodology is a consistent and valid approach to measure the stock price reaction (Campbell et.al, 1997; and Thompson, 1995). Event study methodology uses the financial market data to measure whether the shareholders can earn abnormal returns due to a specific event. An abnormal return is the difference between the actual return observed and the expected return if the event does not occur (Peterson, 1989).

This method is only appropriate with the assumption that market is efficient (McWilliams & Siegel: 1997). In an efficient market, share price will reflect all the information immediately so that we are able to observe the impacts of the event to the share prices. Hence, any change in share prices will reflect expectations of shareholders about future cash flows. According to Pangarkar and Lie (2004), Singapore equity market is believed to satisfy this assumption. They mentioned that Singapore market has a strong regulatory framework since the early days of development. For example, it has banned market rigging and fraudulent practices since 1986. It adopt best practices, (e.g., mandatory audit committees since 1990), even before some developed countries. Additionally, it has high liquidity, and a well-developed foreign exchange market, which helps to access easily to foreign institutional buyers. Some previous studies, such as Lee et.al (1997), conclude that Singapore equity market can react quickly to new information such as merger announcement. As a result, they believe that Singapore market is efficient.

Event study has two additional assumptions. This methodology assumes that there were no confounding effects during the event period. This assumption is crucial because if there are relevant events happening in the event period, it is hard to isolate the impact of the event of interest (McWilliams & Siegel, 1997). The final assumption, on which event studies rely, is the event is unforeseeable.

This thesis will employ daily data as inputs for event study methodology and there is a problem relating to using daily data. When dealing with daily data, Brown and Warner (1985) note that this may raise the possibility that daily returns may not be normally distributed and exhibit serial dependence. However, they conclude that methodologies based on Ordinary Least Squares (OLS) market model are "well specified under a variety of conditions". Panayides and Gong (2002); Davidson, Dutia and Cheng (1989) then confirmed this and concluded this method provide the most accurate measure of abnormal performance.

The procedure of an event study methodology includes four steps. Firstly, we need to identify the event of interest, which is the impact of M&A announcements on stock prices in this thesis. Secondly, we need to identify the estimation, event windows. Thirdly, we will estimate the parameters α β, which are used to calculate the expected returns, in the estimation window. Lastly, the abnormal returns are obtained by subtracting the normal returns from those observed returns during the event window. It is necessary to test whether those abnormal returns are significant different from zero. The most common test statistic to examine this is t test, which is conducted by Brown and Warner (1985). Additionally, a non-parametric generalized sign test developed by Cowan (1992) will be employed to test for significance.

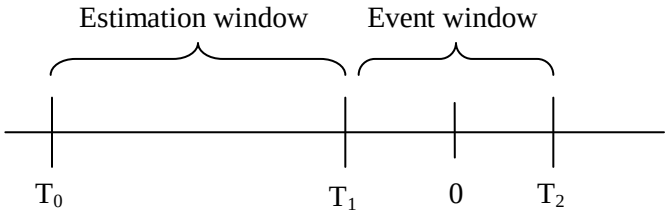
Estimation window is the time period, which is used to estimate the expected or normal returns (Peterson, 1989). Length of estimation window varies across studies. Peterson (1989) and Armitage (1995) argue that the appropriate estimation period when dealing with daily studies should be between 100 and 300 trading days. In this study, I will choose 200 days for the estimation window. Furthermore, MacKinlay (1997) indicates the estimation window should exclude event window, which will be discussed shortly, to avoid the event will influence the estimation of parameters.

Event window is the period over which the security prices of companies involved in the event are examined (MacKinlay,1997). Ideally, it would be sufficient that event window constitutes only event day. However, in practice, event window usually last for a couple of days. Nevertheless, the numbers of days in the event window should not be long since long event window indicates that researcher do not believe in quickly reaction in share prices. That violates the first assumption of the event studies, which states that the share prices incorporates immediately any effect of the event into share prices. In addition, using long event window indicates that the event might be anticipated, which again violates the last assumption indicating that the event is unforeseeable. Moreover, the longer the event period, the risk of encountering confounding event increases. That is why; we need to find an appropriate event window in order to fully capture the impact of M&A announcement, but not violate assumptions of event study. According to Panayides and Gong (2002), event windows of 11 days can fully capture the effects of an event of

interest. Inspired of that, event window for this sample will include 11 days, centred by the announcement day (5 days prior to the M&A announcement and 5 days following the announcement date and announcement day). The reason I choose 5 days before the M&A announcement is in some previous studies such as Ma et.al (2009), they indicates that share prices are influenced by the rumour about the M&A before the official announcement is actually taken place. Hence, these 5 days are useful to detect any price movement due to the impact of any rumour. On the other hand, stock performance of acquirers during 5 days after M&A announcement are examined since the reaction to the M&A announcements can last for the next few days. That could be because an announcement may be made in one day, but financial press does not report it until the next day; or since the announcement is made after trading hours, so stock reaction may not be recognized until the next day.

One advantage of studying the impact of M&A announcement in short run is that we do not need to control for size effect. Size of the companies is only important for studies of long run effects because failure to control size effect will lead to biased results (Gregory, 1997).

Let us define the announcement day as t=0, the estimation window is from day $t=T_0$ to $t= T_1$, event window constitutes $t=T_1+1$ to $t=T_2$. The following diagram illustrates the timeline in this thesis:



According to the timeline, the estimation window starts from T_0= -205 to T_1= -6, including 200 days. The event window starts from day T_1+1= -5 to T_2= +5, which constitutes 11 days centred on the event date. The event and estimation windows cannot be overlapped; otherwise, they will lead to a situation where both normal and abnormal returns will capture the effect of M&A announcement (MacKinlay, 1997)

Calculation of abnormal return

The abnormal return is the difference between the actual returns and the expected returns in case that the event does not take place during the event window. The expected returns are defined as the normal return that the shareholders may earn if the M&A announcements have not occurred (MacKinlay, 1997). In order to estimate the abnormal returns, we need to estimate the expected returns if the event of M&A announcement had not occurred. There are three models, which are commonly used to estimate expected returns, which are Capital Asset Pricing Model (CAPM), constant mean return and market models.

CAPM model is commonly used during the 1970s. In this model, expected return is determined by its covariance with the market portfolio (MacKinlay, 1997). However, this model requires risk-free rate of return to get the expected normal return, which can cause an obstacle, especially if we conduct the event study in developing countries, which has underdeveloped government-issued securities markets (Ma, Pagán & Chu, 2009). In addition, due to restrictions imposed by CAPM, the results might be sensitive (MacKinlay, 1997). Due to these reasons, CAPM method becomes less common.

According to MacKinlay(1997), constant mean return is an improvement over the CAPM model. The constant mean return model assumes that return mean of a security will be constant through time. Constant mean return model determines the mean-adjusted return by subtracting the average return for stock i during the estimation period from observed returns during the event period. Nevertheless, this model does not control for the risk of the stocks or returns on the market portfolio over the event period. Therefore, this method will produce greater variance in abnormal returns as compared to the market model, which will be discussed shortly (Binder, 1998). The market model will remove the portion of return, which is related to the variation in the market's return, and as a result, reduce the variation in the abnormal return. Thus, it can increase the ability to detect the impacts of events. Market model seems to be an improvement over mean-adjusted return model and even CAPM model. That is why; in this study, I will utilise market model to estimate abnormal returns during the event window.

The market model assumes a stable linear relationship between market return and security return (MacKinlay, 1997).To estimate the expected returns using market model, we apply the Ordinary Least Squares (OLS) to estimate the relationship between return of the security and the return of the market:

$$R_{i,t} = \alpha_i + \beta_i R_{m,t} + \varepsilon_{i,t}$$

Where:

$R_{i,t}$ – Rate of return of security i at time t

$R_{m,t}$ - Return of the benchmark market index at time t

$\varepsilon_{i,t}$ – Random zero-mean disturbance term

α_i, β_i - Parameters of market model to be estimated

The daily closing rate of returns are calculated by

$$R_{i,t} = [(P_t - P_{t-1} + D_{i,t})/P_{t-1}]x100\%$$

Where

$R_{i,t}$ – Rate of return of security i at time t

P_t – The closing price on security i at time t

P_{t-1} - The closing price on security i at time t-1

$D_{i,t}$ – Cash dividend on security i on the ex-dividend day concerned

The daily closing rates of market index are calculated as:

$$R_{m,t} = [(P_{m,t} - P_{m,t-1})/P_{m,t-1}]x100\%$$

Where,

$R_{m,t}$ - Rate of return on the market at time t

$P_{m,t}$ – The closing market index at time t

$P_{m,t-1}$ – The closing market index at time t-1

As defined above, the abnormal return is the difference between the observed return in the market and the normal return or expected return if the event had not occurred. Therefore, the abnormal return is calculated as follow:

$$AR_{i,t} = R_{i,t} - \alpha_i - \beta_i R_{m,t}$$

Where, $AR_{i,t}$ – Abnormal return of stock i at time t

In order to capture the total effect of stock movements during the period, we will estimate the average abnormal return (AAR) across all securities for any individual time period t

$$AAR_t = \frac{1}{N}\sum_{i=1}^{N_t} AR_{i,t}$$

Where: AAR_t – Average abnormal return across all securities for individual time period t

N - Number of companies in the sample

Cumulative abnormal return (CAR) is calculated as:

$$CAR_{i,(t1,t2)} = \sum_{t=t1}^{t2} AR_{it}$$

Where: $CAR_{i,(t1,t2)}$- Cumulative abnormal return in an interval starting from time t_1 to t_2

t_1,t_2 – the first day and the last day of the event period

In order to estimate cumulative effect of the event, we estimate cumulative average abnormal returns through time and across all securities (CAAR). According to Cheng, et.al (2007), CAARs will provide a clear indication of the direction and magnitude for aggregated stock price movement of acquirers during the event window.

$$CAAR_{(t1,t2)} = \sum_{t=t1}^{t2} AAR_t$$

Where t_1, t_2 – the first day and last day respectively of an event period in which AAR_t are accumulated.

Univariate testing

Finally, we want to test whether the abnormal returns are due to chance or because of M&A announcements. To do that, we will carry parametric and non-parametric tests on our abnormal returns. Most statistical tests contain some drawbacks or potential problems. Therefore, it is agreed by many empirical research that we should use both parametric and non-parametric tests and not only rely on any particular test. In doing this, results from different tests can support each other and overcome drawbacks. In this thesis, I will use parametric t test developed by Brown and Warner (1985) and non-parametric generalized sign test by Cowan (1992) to test this hypothesis.

Parametric test

- T test by Brown and Warner (1985)

This thesis will employ the test statistic of Brown and Warner (1985). This test is based on the standard t test to infer whether cumulative average abnormal return (CAAR) is significantly different from zero. Therefore, the null and alternative hypothesis of the test are:

H_0: $CAAR_{(t1,t2)} = 0$

H_1: $CAAR_{(t1,t2)} \neq 0$

The numerator of parametric t-test measures the impact of M&A announcement relative to expected return when the event had not occurred. The denominator of t-test takes account of scaling the number using estimated variance. In this sense, the test statistic is calculated by dividing the CAAR by its estimated standard error. Test statistic for CAAR is estimated as:

$$\emptyset_c = CAAR/[SE(n)^{\frac{1}{2}}]$$

Where n is the number of trading days over which the average abnormal return is calculated.

SE is the standard deviation of average abnormal returns during the estimation window and is calculated as:

$$SE = \sum_{T1}^{T2}[(AAR_t - \overline{AAR})^2/(T-1)]^{1/2}$$

Where: T1, T2 is the first day and the last day of estimation window

T is the number of days in the estimation window

$\overline{AAR}$ is the average abnormal return across all the securities during the estimation window and is estimated as:

$$\overline{AAR} = \frac{1}{T}\sum_{t=T1}^{T2} AAR_t$$

If $\emptyset_c$ > t value, we reject the null and conclude that M&A announcement will impose impacts on shareholder value for acquirers. The significance of test statistic of the result also means the security return does not depend on the random factor and it is affected by the announcements of M&A.

The t-test makes four assumptions about the parameters of population. Firstly, observations must be drawn from normal distribution. Secondly, the they must be independent. Thirdly, they must have a constant variance, and finally an expected value of abnormal return equals zero. Of which, the assumption about distribution of observations is critical for the robustness of parametric tests in event studies (Keller; 2005). Furthermore, Bartholdy et. al (2007) note that under null hypothesis, skewness and kurtosis of observations should equal to zero. That is because positive kurtosis would cause fall rejection frequencies,

meanwhile skewness which does not equal to zero would cause rejection frequencies which are different for positive and negative events.

Non-parametric test

In addition to parametric test, I will use a non-parametric test, which is the Generalized sign test introduced by Cowan (1992). The reason I choose both parametric and non-parametric test because parametric test makes an assumption about the nature of population from which the observations are drawn (Siegel, 1957). It assumes that the abnormal returns are normally distributed. If this assumption holds, the parametric tests are powerful and can outperform the non-parametric tests. In contrast, if the assumption is violated, the non-parametric tests are preferable because non-parametric tests make no assumptions about the population (Siegel, 1957). The fact that non-parametric tests do not make any assumptions about security returns make them essential in this sample because this thesis uses daily returns of securities, which normally exhibit non-normal distribution.

In addition, Cowan (1992) indicates that when thin trading stocks are included in the sample, it is likely that the assumptions characterizing parametric tests are likely violated. Therefore, parametric test may be misleading and non-parametric tests are preferable.

Moreover, event-induced volatility is very common in many event types including M&A transactions. As noted by Brown and Warner (1985), the increase of variance surrounding the event day will lead to misspecification of the standard parametric tests. They will report stock reaction more often than expected (Type I error). Therefore, non-parametric tests dominate parametric tests in this situation because non-parametric tests do not use return variances, hence will perform better in case variance increases.

- Generalized sign test by Cowan (1992)

"Generalized sign test examines whether the number of stocks with positive cumulative abnormal returns in the event window exceeds the number expected in the absence of abnormal performance", as pointed out by Cowan (1992). That is why; the test is able to take account of the asymmetry of return distribution and dominates parametric t test. Cowan (1992) also mentions that this test is well specified for event windows from one to eleven. This test is powerful and become more powerful as the length of CAR window increases. Our sample includes eleven days, centred on the event day, in the event window and hence fit exactly the length of time this test is well-specified. Additionally, this test is shown to be robust to event-induced volatility because generalized sign test only take account of the sign, not magnitude of abnormal returns.

In Generalized sign test, the probability of observing positive or negative abnormal returns is estimated based on actual abnormal returns from estimation window. Under the null hypothesis that there is no abnormal returns due to M&A announcement, the number of positive abnormal returns in the event window is equal to the number of expected positive abnormal returns in the absence of the event. According to Cowan (1992), the generalised sign test is calculated as:

$$Z_G = \frac{w - n\hat{p}}{[n\hat{p}(1-\hat{p})]^{\frac{1}{2}}}$$

Where

$$\hat{p} = \frac{1}{n}\sum_{i=1}^{n}\frac{1}{m_i}\sum_{t=T_0+1}^{T_1} S_{it}$$

$$S_{it} = \begin{cases} 1 \; if \; AR_{it} > 0 \\ 0 \; otherwise \end{cases}$$

w is defined as the number of stocks in the event window, for which the $CAR_{i(t1,t2)}$ is positive.

AR_{it} is defined as before

n is the number of observations.

m_i is the number of non-missing returns in the estimation window for security i

Multi-variable Testing

A multi-variable analysis will allow us to perform robust test on shareholder's value effects. This thesis will employ OLS to establish the relationship between three factors (domestic/cross-border M&A, method of payment, directions of merger) and Cumulative Abnormal Returns (CARs). From this model, we can develop a basis to predict the CAR from available information.

The OLS model to examine the impacts of three factors on CAR is:

$$CAR_{i,(t1,t2)} = \alpha + \beta_1 crossborder_i + \beta_2 cash_i + \beta_3 sameindustry_i + \varepsilon$$

Where: α - Intercept

$crossborder_i$ – dummy variable that equals to 1 if the transaction is cross-border M&A and 0 otherwise

$cash_i$ - dummy variable that equals to 1 if the transaction is made in cash and 0 otherwise

$sameindustry_i$ - dummy variable that equals to 1 if acquirers and target companies are in the same industry, 0 otherwise.

ε – residual term.

Data description

During the period from 01/01/2000 to 31/12/2007, our sample includes 165 M&A transactions in Singapore market. Table 1 reports the number of M&A transactions, total announced value and the mean values of M&A transactions each year from 2000 to 2007. There is a trend in the data. From table 1, there are few M&A transactions in Singapore market in 2000, only 6 cases in the year and total announced value amounts to S$2909 millions. That may be due to the effects of Asian financial crisis in 1997 originated from Thailand, which is a neighbour of Singapore in South East Asia. The number of M&A transactions gradually increases correlated to years. In 2001, there are 16 transactions in this year and total announced value gain dramatically to around S$18,000. This significant gain is due to M&A transaction between Singapore Telecommunications Ltd and SingTel Optus Pty Ltd, whose total announced value amounts to over S$17,000. In 2002 and 2003, the number of M&A transactions increases to 20 transactions each year. Except for 2005 when the number of M&A transactions drops slightly to 18 cases, the amount of M&A cases from 2004 increases in every year after that and reaches the highest 31 cases in 2007.

Table 1: Distribution of M&A transactions by year and announced total value each year

Year	No of transactions	Announced total value (S$mil)	Average value (S$mil)
2000	6	2909.08	484.85
2001	16	18129.5	1133.09
2002	20	731.03	36.55
2003	20	1312.96	65.65
2004	26	1774.38	68.25
2005	18	1089	60.50
2006	28	2960.47	105.73
2007	31	1179.51	38.05
Total	**165**	**30085.93**	**182.34**

Table 2 exhibits the number of M&A transactions under different three sub-samples, which are domestic/cross-border M&A, method of payment, direction of merger. As we can see from the table, there are 87 cross-border M&A transactions (52.7%) and 78 domestic M&A transactions (47.3%). We can see from this sample that in Singapore, more companies engage in cross-border M&A transactions than domestic transactions, but the difference is not large. In contrast, the number of transactions in two categories method of payment and industry exhibits a large gap. M&A transactions using cash seem to dominate transactions using stocks or combination of cash and stocks. There are 103 M&A cases, which use cash as a method of financing for M&A deals, amount to 62.42% of total number of deals; while there are only 34 deals using stocks to finance M&A deals, only 20.61% of total deals. The remaining 28 deals finance M&A deals by combination of cash and stocks, which count only 16.97% of total number of deals. Similarly, there are only 65 M&A transactions (39.4%) between two companies operating in the same industry group. Meanwhile, 100 M&A transactions (60.6%) are implemented between two companies in two different industry groups. It seems that acquirers in Singapore prefer acquiring companies operating in another industry group rather than in the same industry group.

Table 2: Numbers of M&A transactions according to different determinants

		No of transactions	%
Cross-border	Yes	87	52.73%
	No	78	47.27%
Method of payment	Cash	103	62.42%
	Stock	34	20.61%
	Mixed	28	16.97%
Same industry	Yes	65	39.39%
	No	100	60.61%

Table 3 shows us the distribution of M&A transactions by industry. In our sample, the acquirers are categorized in 35 industry groups. Electronics is the industry that has the most M&A transactions (17 deals) during eight years in the sample. Industries that have fewer M&A transactions as compared to electronics, but still occupy large proportions of M&A transactions during eight years are Commercial Services, Engineering & Construction, Computers and Food.

Table 3: Distribution by industry group

No	Industry group	No of transactions
1	Beverages	1
2	Building Materials	7
3	Chemicals	1
4	Closed-end Funds	1
5	Commercial Services	12
6	Computers	11
7	Distribution/Wholesale	8
8	Diversified Financial Services	2
9	Electrical Compo&Equip	8
10	Electronics	17
11	Engineering & Construction	12
12	Environmental Control	3
13	Food	10
14	Forest Products & Paper	2
15	Healthcare-Products	1
16	Healthcare-Services	1
17	Holding Companies-Divers	6
18	Home Furnishings	3
19	Household Products/Wares	1
20	Internet	4
21	Lodging	4
22	Machinery-Diversified	2
23	Metal Fabricate/Hardware	2
24	Mining	1
25	Miscellaneous Manufacture	1
26	Oil & Gas Services	6
27	Packaging & Containers	2
28	Pharmaceuticals	1
29	Real Estate	9
30	Retail	4
31	Semiconductors	7

32	Shipbuilding	2
33	Software	1
34	Telecommunications	4
35	Transportation	8
	Total	**165**

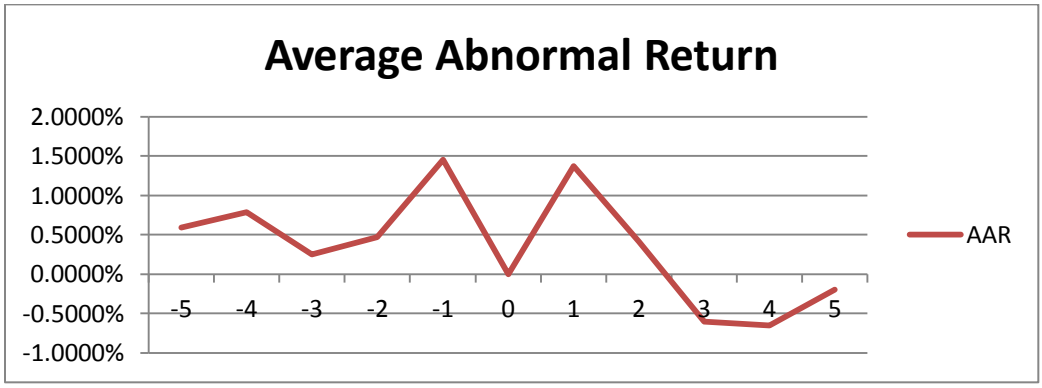
As we can see from table 4, cumulative abnormal returns (CAR) of three time intervals are not normally distributed. A normal distribution should be symmetric with skewness of zero and kurtosis equals three. However, skewness of CARs in this sample is much greater than zero and their kurtosis is also much greater than three. Therefore, it skews to the right and exhibits fat tails. Due to this reason, the assumptions of parametric tests are violated and hence bias from using parametric test is expected. As a consequence, non-parametric generalized sign test is more powerful and reliable than parametric t test. In other words, conclusions drawn should be mainly based on non-parametric test.

Table 4: Descriptive statistics of cumulative abnormal returns

	mean	Median	standard deviation	skewness	kurtosis
CAR(-5;-2)	0.0209943	-0.0004198	0.1059451	1.955161	12.6835
CAR(-1;0)	0.0145273	0.0034029	0.0723069	1.445482	15.26759
CAR(+1;+5)	0.0033138	-0.0024443	0.1439389	5.0615	48.25885

Data analysis and discussion

Figure 1: Average abnormal return in event window



We will have a look on average abnormal return on each day first. As we can see from the figure 1, the average abnormal returns of acquirers are divided into three phases. The first phase is the period before

the M&A announcement is made, from day -5 to day -2, the abnormal returns fluctuate slightly. It goes up to 0.7856% from day -5 to day -4, and then drops to 0.2524% at day -3. From day -3 to day -2, AAR rise slightly again to 0.4687%. The second phase, from day -2 to day 2, records the most dramatically fluctuations of average abnormal returns. AAR gains sharply and reaches their peak of 1.4547% at day -1. However, after that, it starts to drop aggressively to -0.002% at the day the announcement is taken place (t=0). It indicates that the shareholders gain negative abnormal returns in the announcement day. Nevertheless, abnormal return recovers again and achieves 1.4% abnormal return for shareholders in 1 day 1 after announcement day. After day t=1, the average abnormal return drops dramatically and shows negative returns to shareholders in the last phase from day +3 till the last day of the event window (t=+5).

Table 5: Average abnormal returns of acquirers in event window

Day	AAR	CAAR
-5	0.5928%	0.5928%
-4	0.7856%	1.3784%
-3	0.2524%	1.6307%
-2	0.4687%	2.0994%
-1	1.4548%	3.5542%
0	-0.0020%	3.5522%
1	1.3700%	4.9222%
2	0.4091%	5.3313%
3	-0.6004%	4.7309%
4	-0.6513%	4.0796%
5	-0.1960%	3.8835%

In general, we can recognise a positive abnormal return during the pre-announcement period and record a peak of AAR on day -1 (1.4548%). It indicates that stock market may have positive reactions to the announcement of M&A and there was a leakage of the information about M&A engagements before the announcement is actually made. In the announcement day, the sample exhibits a small negative average abnormal return on the day. However, on the next day, it starts to rise again. One possible reason for that can be some announcements may be made after trading hours. That is why; stock price cannot quickly react on the announcement day and need to wait until the next day to reflect the impact of M&A announcement. During the post-announcement period, the M&A announcement seems to have negative

effects on AAR of acquirers, but overall, shareholders still earn positive CAAR due to M&A announcement during the event window.

To see the total effect of M&A announcement, we will examine the cumulative average abnormal return (CAAR) in different time intervals. The cumulative average abnormal returns are examined in 3 time intervals: pre-announcement period (-5;-2), announcement period (-1;0) and post-announcement period (+1;+5). Table 6 describes CAAR of acquirers during three periods. According to table 6, CAARs under all three time periods are positive.

Shareholders of acquirers earn a positive CAAR of 2.10% during pre-announcement period. The positive return can be explained as investors are expected about the future performance of combined firms. Therefore, they are willing to hold more stocks. As a result, acquirers' stocks increase in price and generate abnormal returns to shareholders. However, this CAAR is not significant at 10% level. It seems that the M&A transactions were anticipated, however, the rumours or insider trading has little impacts on acquirers. Therefore, we conclude that M&A announcements do not affect abnormal returns for shareholders of acquirers during pre-announcement period.

The abnormal returns are realized in the announcement period. From a day prior to announcement day to announcement day, shareholders of acquirers receive a positive CAAR of 1.45%. Parametric test does not result any significant value, however, non-parametric generalized sign test shows that this positive CAAR for the announcement period is significant at 1% level. For that reason, we can reject the null of no abnormal return for shareholders of acquirers during announcement period. Although this result is contrary to most UK and US empirical studies, it supports the conclusion from previous study for Asian market such as Ma et.al (2009). Their study indicates that CAARs for 10 Asian countries are positive and significant at 1% significant level. Other studies gives the same conclusions are Wong and Cheng (2009), Wang (2009) or Chi (2011). Therefore, M&A announcement seems to be good news for shareholders of acquirers in Singapore and generally for Asian markets.

The CAAR for shareholders of acquirers in the post-announcement period is 0.33%. Both parametric t test and non-parametric generalized sign test show no significant result. Therefore, we cannot reject the null that M&A announcement generates no abnormal returns to shareholders of acquirers during post-announcement period. This result is consistent most previous studies for US or UK samples, indicating that CAAR will not generate any abnormal returns to shareholders of acquirers. We can see that CAAR obtained from post-announcement period is lower than pre- and announcement period. This shows that investors may overestimate the acquirers during pre- and announcement period. Hence, when more information such as financial information of related companies or terms and conditions of the proposal is

available or the performance of combined companies does not match the market expectations, those investors change their minds. As a result, they may sell their shares and bring down share prices.

Table 6: CAARs of Acquirers

Time interval	CAAR (%)	t-value	Z-value	
Pre-announcement period				
(-5;-2)	2.10%	0.23	1.18	
Announcement period				
(-1;0)	1.45%	0.22	3.06	***
Post-announcement period				
(+1;+5)	0.33%	0.02	0.86	

*** significant at 1% level

In order to examine different factors that could help to explain abnormal returns, we will conduct further tests for sub-samples. We will examine in-depth the cumulative average abnormal returns of acquirers under three categories: domestic/cross-border M&As, methods of payment, direction of mergers to see the impacts of these factors on stock performance.

Cross-border/Domestic M&A transactions

We split our sample into two groups: cross-border and domestic M&As. Cross-border M&A group includes all transactions in which acquirers in Singapore acquire target companies in other countries. Domestic M&A group includes all transactions in which both acquirer and target companies are operating in Singapore. Our sample includes 87 cross-border and 78 domestic M&A transactions. Table 7 shows CAARs that shareholders of acquirers earn before, during and after M&A announcements, distributed by whether the transactions are cross-border or domestic M&A.

From table 6, during three time intervals, both domestic and cross-border M&A transactions generally generate positive CAARs. During pre-announcement period, both cross-border and domestic M&As generate CAARs of 1.96% and 2.26% respectively. Nevertheless, both parametric and non-parametric tests indicate that they are not statistically significant different from zero.

In the announcement period, shareholders of acquirers earn 0.5% CAAR in cross-border M&As and receive 2.52% CAAR if the target companies are inside the acquirers' country. Parametric t test indicates

the CAARs during announcement period for both domestic and cross-border M&As are not significantly different from zero, however, non-parametric test indicates significant CAARs for both cross-border and domestic M&A transactions. If the target companies are outside Singapore, CAAR generated is significant at 10%. If the target companies are in Singapore, shareholders of acquirers receive significant positive CAAR at 1% level. Therefore, we can conclude that the country of target companies impose effects on the value of acquirers' shareholders during the announcement period.

Moreover, domestic M&A deals seem to generate higher abnormal returns than cross-border M&A transactions during pre- and announcement period. Cross-border M&A transactions are not being seen as attractive to shareholders of acquirers during these two periods. This finding is in line with those studies of Moeller & Schlingemann (2004), Conn et al. (2005), Bertrand & Zitouna (2005) and Martynova & Renneboog (2006), stating that domestic M&A transactions generate more positive returns than cross-border M&As. One of the reason could be shareholders are doubt about the future of acquirers. As acquiring a foreign company, acquirers must face with many problems such as culture differences, government, regulations in that country. Thus, it is more risky to acquire target companies in other countries than to acquire target companies in the home country, where acquirers already have knowledge about it. As a result, acquirers have higher probability to improve performance after M&A engagement and generate value for shareholders in domestic M&As. Hence, shareholders of acquirers are willing to hold more stocks.

During post-announcement period, cross-border M&A transactions slightly generate higher CAAR than domestic M&A ones. Shareholders of acquirers in cross-border M&A transactions earn about 0.44% CAAR, while those in domestic M&A transactions get 0.21% CAAR. However, only cross-border M&A generates a significant CAAR at 10% level.

Table 7: CAARs of Acquirers by Cross-border/Domestic M&A transactions

	Cross-border M&As				Domestic M&As			
Time interval	**CAAR (%)**	**t-value**	**Z-value**		**CAAR (%)**	**t-value**	**Z-value**	
Pre-announcement period								
(-5;-2)	1.96%	0.15	0.76		2.26%	0.11	0.91	
Announcement period								
(-1;0)	0.50%	0.05	1.41	*	2.52%	0.28	2.96	***
Post-announcement period								
(+1;+5)	0.44%	0.03	1.41	*	0.21%	0.01	- 0.23	

***,** and * respectively significant at 1%, 5% and 10% level

Methods of payment

Table 8 describes CAARs of acquirers to the extent of methods of payment during three different time intervals. We examine the impacts of methods of payment by dividing the sample into two groups: cash and others. Cash group includes all M&A transactions financed by cash. Others group contains all M&A transactions financed by stock or combination of cash and stocks. Our sample includes 103 transactions, which are financed by cash, and 62 transactions, which are financed by other methods of payments. Other methods of payment can be stock finance or a combination of cash and stocks, from which 34 transactions are financed by stock and the remaining 28 transactions are financed by both stocks and cash.

Method of payment does have impact on CAARs of acquirers. As can be seen from the table 8, during pre- and announcement period, all methods of payment produce positive CAARs for shareholders of acquirers. Except for M&A transactions using cash offer in pre-announcement period, which generate a small insignificant positive CAARs, non-parametric test shows that other CAARs for cash and other methods of payment are significant positive during these two periods. In the pre-announcement period, other methods of payment generate 4.23% CAAR for acquirers' shareholders, which is statistically significant at 10% level. In the announcement period, M&A transactions with cash offer create 0.56% CAAR at 10% significant level for shareholders of acquirers, while other methods of payment generates a significant CAAR of 2.93%, at 1% level. As a result, we conclude that methods of payment impose effects on CAAR of acquirers during pre- and announcement periods.

During these two periods, we can find that shareholders of M&A transactions, which use other methods of payment besides cash only, seem to be more beneficial than those using cash offer. CAARs generated from other methods of payment dominate those generated from cash offer, approximately over 5 times higher. Hence, M&A transactions with cash offer in Singapore do not offer higher abnormal returns to shareholders of acquirers as indicated by most of previous studies. This finding is consistent with some studies such as Cheng (1998) or Ang and Cheng (2006). Therefore, current arguments seem to be appropriate to explain the behaviour of stock performance in Singapore. Shareholders of acquirers are afraid that the use of cash offer will cause financial distress to acquirers and limit the available funds for future investments. Moreover, they do not want to take entire risk and want to share the risk that expected synergy might not materialize with shareholders of target companies.

On the other hand, over the period after M&A announcements are made, the impacts seem to be contrary. M&A transactions with cash offer generate a positive CAAR of 0.93% for shareholders of acquirers. However, shareholders of acquirers using other methods of payment earn a negative CAAR (-0.66%). CAAR from M&A transactions with cash offer tends to be higher than those with other offers in the post-

announcement period, leading to an opposite result to those obtained for pre- and announcement periods. In addition, these CAARs are insignificant under both parametric and non-parametric tests. Therefore, methods of payment have no impacts on CAARs for shareholders of acquirers during post-announcement period.

Table 8: CAARs of Acquirers by methods of payment

	Cash				Others			
Time interval	**CAAR (%)**	**t-value**	**Z-value**		**CAAR (%)**	**t-value**	**Z-value**	
Pre-announcement period								
(-5;-2)	0.81%	0.09	0.41		4.23%	0.23	1.39	*
Announcement period								
(-1;0)	0.56%	0.09	1.60	*	2.93%	0.22	2.92	***
Post-announcement period								
(+1;+5)	0.93%	0.10	1.20		-0.66%	- 0.03	- 0.14	

***,** and * respectively significant at 1%, 5% and 10% level

Direction of mergers

In our sample, during 8 years, there are 65 M&A transactions taken place between two companies operating in the same industry, while there are 100 M&A transactions between two companies from two different industries. Table 9 depicts CAARs of acquirers under two groups. The first group includes acquirers and target companies operating in the same industry group and the second group includes those operating in different industries group.

In pre-announcement and announcement period, both groups show positive CAARs. During pre-announcement period, M&A transactions under same industry group generate 1.82% CAAR, while those under different industries group produce a CAAR of 2.28%. Likewise, from day -1 to day 0, M&A transactions between two companies in the same industry bring about 1.18% CAAR, while M&A transactions between two companies from different industries generate a CAAR of 1.63%. However, only CAARs during announcement period are statistically significant different from zero. CAAR of M&A transactions in the same industry group is statistically significant at 10% level; meanwhile CAAR of M&A transactions in different industries group is significant at 1% level. Therefore, we can conclude that, during the announcement period from day -1 to the event day, direction of M&As does affect the CAAR of shareholders of acquirers. The positive CAAR for the same industry group supports the previous theory, stating that horizontal M&As will generate synergy and hence create value for

shareholders of acquirers. This result is in line with most of previous studies such as Bosveld, Meyer and Vorst (1997), which indicates both acquirer and target companies show positive CARs in horizontal M&As when examine Dutch M&A transactions in the period from 1979 to 1995. Nevertheless, the significant positive CAAR for M&A transactions between two companies operating in different industries is contrary with the previous theory, which indicates vertical and conglomerate M&As will produce negative or zero abnormal returns for shareholders of acquirers.

On the other hand, during the post-announcement period, CAAR generated from M&A transactions in the same industry group exhibits a negative figure of -0.47%. Nevertheless, it is statistically insignificant. M&A transactions in different industries group create positive CAAR (0.85%) and this CAAR is also not significant. Therefore, this finding shows that direction of merger does not have any impacts on the performance of stocks during the post-announcement period.

During pre-announcement, announcement, and post-announcement period, M&A transactions in different industries group not only produce positive CAARs, but also generate higher CAARs than those in the same industry group. It seems that M&A transactions between two companies operating in different industry group generate higher CAARs for shareholders of acquirers than those operating in the same industry group. This is different from most of previous theory and empirical studies, which states that industry focus strategy is better than diversifying strategy (Bruner, 2003).

Table 9: CAARs of Acquirers by direction of M&As

	Same industry				Different industries			
Time interval	**CAAR (%)**	**t-value**	**Z-value**		**CAAR (%)**	**t-value**	**Z-value**	
Pre-announcement period								
(-5;-2)	1.82%	0.17	0.14		2.28%	0.17	1.40	
Announcement period								
(-1;0)	1.18%	0.16	1.64	*	1.63%	0.17	2.61	***
Post-announcement period								
(+1;+5)	-0.47%	- 0.04	1.14		0.85%	0.06	0.19	

***,** and * respectively significant at 1%, 5% and 10% level

In general, we can conclude that M&A announcement do have impacts on the shareholder value of acquirers during the announcement period. This effect on CAAR is significant and consistent in throughout different determinants of CAARs: cross-border/domestic M&As, methods of payment or directions of mergers.

Regression result

To confirm the results obtained from the previous tests about the impacts of determinants on abnormal returns for shareholder value of acquirers, we do multivariate test on cumulative abnormal returns (CAR). We examine three different determinants, which are cross-border/domestic M&A, methods of payment and direction of mergers, in three time intervals as previous tests. The results of the test are presented in table 10.

Table 10: Determinants of Short-term wealth effects for Acquirers

	CAR(-5;-2)		**CAR(-1;0)**		**CAR(+1;+5)**	
Independent variables	**Coeff.**	**t-value**	**Coeff.**	**t-value**	**Coeff.**	**t-value**
α	0.0417***	(2.64)	0.0356***	(3.32)	-0.00160	(-0.07)
Cross-border	0.00591	(0.35)	-0.0154	(-1.32)	0.000410	(0.02)
Cash	-0.0355**	(-2.03)	-0.0197*	(-1.66)	0.0163	(0.68)
Same industry	-0.00419	(-0.25)	-0.00160	(-0.14)	-0.0139	(-0.60)
***,** and * respectively significant at 1%, 5% and 10% level						
N	165		165		165	
R-squared	0.0256		0.0363		0.0051	
adj. R-sq	0.007		0.018		-0.013	
F-statistics	0.2427		0.1131		0.8436	

During the pre-announcement period, cross-border M&A shows a positive relationship with CAR, while cash payment and same industry show negative relationships with CARs for shareholders of acquirers. However, only cash determinant shows a significant result at 5% level. This confirms the finding from previous section, showing that methods of payment affect the abnormal returns for shareholders of acquirers during the pre-announcement period.

During announcement date, three determinants exhibit negative relationships with CARs. Among these determinants, method of payment is the only one, which shows significant relationship at 10% level. This finding is consistent with the previous section stating that during the announcement period, the methods of financing M&A transactions will affect shareholder value of acquirers.

During post-announcement period, cross-border and cash payment show positive relationship with CARs, while M&A transactions between two companies in the same industry show negative relationship with CAR. However, none of those determinants is statistically significant from zero. This finding is consistent with the finding from univariate tests for methods of payment and direction of merger, from which the

conclusion of no relationship between these two determinants and returns to shareholders during post-announcement period is achieved.

In sum, from this regression, we find that method of payment has impacts on stock performance of acquirers during pre-announcement and announcement period. This finding from the regression is consistent with the result from univariate tests for method of payment. On the other hand, while univariate tests conclude that cross-border or domestic M&A transactions and direction of mergers impose effects on stock performance during pre-announcement and announcement period; regression results imply that these two determinants do not affect the CAR for shareholders of acquirers in any time period.

Delimitation

Like any other studies, this thesis contains some delimitation:

First, this thesis takes into consideration only M&A transactions taken place during eight years from 2000 to 2007. Hence, the results of this research cannot represent for M&A transactions in Singapore all the time. The reason for it is noted by Smit (2005), who identifies that the market for M&A transactions changes over time and depends on distinct waves.

Similarly, this thesis focuses only on M&A transactions of companies in Singapore. Hence, it cannot represent for other countries and regions.

The examined period is not long enough; hence, the effects of M&As to Singapore acquirers may not be apparent. From 2000 to 2007, Asian markets were facing with the break of IT bubbles, so price of most stocks fluctuated dramatically. Additionally, Singapore is an opening market and relates closely to global economic environment. Therefore, Singapore stock prices will drop as the result of financial crisis and the result may be affected by the financial crisis.

Moreover, this thesis focuses only on the short-run effect of M&A announcement to stock performance and on acquiring companies. Hence, it leaves out the long-run effects and effects on target companies.

In addition, this thesis examines M&A transactions whose total announced value is greater than S$1 million. Therefore, the result cannot reflect the impact of M&A announcement in smaller transactions.

This thesis analyses M&A transactions in different industries, so it may ignore the possibility that M&A transactions could be value creation for some certain industry sectors, while concurrently value destroying in other industry sectors.

Finally, this sample only considers those acquirers, which are listed on Singapore Stock Exchange. Accordingly, it ignored M&A transactions made by unlisted companies.

Conclusion

Mergers and acquisitions are becoming not only popular in US and European developed countries, they are now expanding to Asian market, especially after the Asian financial crisis in 1997. However, there are few studies about M&As for Asian markets. That is why; this thesis will particularly investigate the impacts of M&A announcement on shareholder value for acquiring companies in a country of Asian markets. That is Singapore. This thesis examines 165 M&A transactions in Singapore during the period from 2000 to 2007 to see whether M&A announcements have any impacts on value of shareholders of acquirers in short run. Furthermore, this thesis also investigate three determinants, which are cross-border/domestic M&As, methods of payment and direction of mergers, to find out any relationship between those determinants and abnormal returns for shareholders of acquirers. We investigate the sample in three different periods: pre-announcement period (-5;-2), announcement period (-1;0) and post-announcement period (+1;+5). By employing event study methodology, we found the following results:

During the pre- and post-announcement period, there exist positive cumulative abnormal returns of 2.10% and 0.33% for shareholders of acquirers. However, these numbers are not statistically significant. Hence, we cannot reject the null of no abnormal return generated from M&A announcements to acquirers for these two periods. In contrast, during the announcement period, there exists a significant positive cumulative abnormal return for shareholders of acquirers at 1% level. This indicates that the stock performance of acquirers in response to M&A announcement in Singapore is positive. Therefore, M&A announcements can be seen as good news to shareholders of acquirers during announcement period from day -1 to day 0.

In the second part of this thesis, we investigate three factors that may impose impacts on shareholder value of acquirers. They are cross-border/domestic M&As, methods of payment and direction of mergers. To find out their relationships with abnormal returns for acquirers, we employ both univariate and multivariate tests. Using univariate test, we find out as followings:

In examining whether abnormal returns of acquirers will be affected by cross-border or domestic M&As, we estimate separately CAARs that shareholders of acquirers earn if M&A transactions are cross-border or domestic. We found that during pre-announcement period, there is no significant evidence to conclude that M&A announcements generate abnormal returns for acquirers under both cross-border and domestic M&A transactions. During announcement period, both cross-border and domestic M&A transactions

create positive and significant CAARs for shareholders of acquirers. CAAR generated by cross-border M&A transactions is 0.5% and statistically significant at 10% level, while CAAR generated by domestic ones is 2.52% and significant at 1% level. Thus, we can conclude that Singapore acquirers acquire domestic target companies can generate positive abnormal returns as those acquire foreign target companies and domestic M&A transactions even seem to produce higher abnormal returns than cross-border ones. In post-announcement period, cross-border M&A transactions generate a positive CAAR of 0.44% for acquirers, at 10% significant level; while domestic M&A deals generate insignificant CAAR.

In order to find out the relationship between methods of payment and abnormal returns to shareholders of acquirers, we split our sample into cash and others group. Cash group includes all M&A transactions for which acquirers use cash to finance, whereas others group includes the other M&A transactions for which acquirers use stocks or combination of stock and cash to finance. The result shows that during pre-announcement period, transactions using other methods of payment generate significant CAAR at 10%, while CAAR of transactions with cash offer is not significant different from zero. Announcement period remarks significant CAARs for all M&A transactions using cash and other modes of payment. Shareholders of Cash offer receive 0.56% CAAR at 10% significant level. Similarly, shareholders of other methods of payment earn 2.93% at 1% significant level. Hence, both groups generate positive significant abnormal returns for shareholders and other methods of payment seem to create higher value for shareholders. During pre-announcement period, none of them shows significant abnormal returns for acquirers.

Finally, we examine the impacts of direction of mergers on abnormal returns for shareholders of acquirers by estimating the CAARs generated by M&A transactions between companies in the same industry and those transactions between companies in different industries. We find that during pre-announcement period, none of them shows CAARs which are significantly different from zero. During the announcement period, M&A transactions between companies in the same industry group will generate a positive CAAR of 1.18% and significant at 10% level. Similarly, if acquirers acquire target companies in different industries relative to them, shareholders of acquirers receive a significant CAAR of 1.63%, at 1% level. M&A transactions between acquirers and target companies operating in different industries seem to dominate those of M&A transactions companies in the same industry. During post-announcement period, we find no evidence to conclude that directions of mergers impose any impact on abnormal returns for shareholders of acquirers.

To confirm the univariate test, we conduct regression between cumulative abnormal returns (CARs) in different time intervals and three determinants. We find that only methods of payment show a significant

relationship with CARs. In pre-announcement period, cash offer has a significant relationship with CARs of acquirers at 5% level. In announcement period, cash offer also shows a significant negative relationship with CARs at 10% level. This result supports again the result of univariate test, indicating that the choice of payment methods of acquirers will affect the abnormal return generated for shareholders of acquirers in pre- and announcement periods.

From the above results, we can answer research questions:

- Will the M&A announcement create or destroy shareholder wealth of Singapore acquirers in short run?

M&A announcement will create shareholder wealth for Singapore acquirers in the short run, particularly during announcement period from the day before announcement until the day announcements are actually made.

- How is the relationship between three factors (domestic/cross-border M&A, methods of payment, directions of mergers) and the performance of stocks?

Cross-border M&A transactions will generate positive abnormal returns for shareholders of acquirers in announcement period and post-announcement period, while domestic M&A transactions will create positive abnormal returns during announcement period.

Methods of payment are evidenced to have impact on shareholder value. No matter acquirers finance M&A transactions by cash or other methods of payment (stocks or combination of stocks and cash), shareholders of acquirers will receive positive abnormal returns during pre- and announcement periods.

Directions of mergers also affect the abnormal returns generated for shareholders of Singapore acquirers. No matter what directions Singapore M&A transactions employ, acquiring target companies in the same industry or in a different industry relative to acquirers, shareholders of acquirers will receive positive abnormal returns during announcement period.

Appendix

Appendix 1: Average abnormal returns of Singapore acquirers

Day	AAR	Day	AAR	Day	AAR
-205	0.0018541	-134	0.0037096	-63	0.0070126
-204	0.0035383	-133	-0.0021728	-62	0.0006967
-203	0.0060179	-132	-0.0027098	-61	-0.0052935
-202	0.0020873	-131	0.0077402	-60	0.0039097
-201	0.000053	-130	-0.0013031	-59	-0.0007365
-200	0.0026361	-129	0.0064339	-58	0.0007447
-199	0.0052486	-128	-0.000685	-57	0.0008441
-198	0.0021705	-127	-0.0027764	-56	0.0001191
-197	0.0008518	-126	0.0049912	-55	0.0079436
-196	-0.0058231	-125	-0.0045182	-54	0.0028202
-195	-0.0022944	-124	0.0021302	-53	-0.0038773
-194	0.0058973	-123	-0.0002547	-52	0.0072791
-193	0.019857	-122	-0.0031116	-51	0.0049813
-192	-0.0045033	-121	-0.0013382	-50	0.0017028
-191	0.0046928	-120	-0.0010443	-49	0.0011879
-190	0.0035387	-119	0.0019837	-48	0.0038795
-189	0.001997	-118	0.0013872	-47	-0.001271
-188	0.0001118	-117	-0.0004263	-46	0.0033162
-187	-0.0007309	-116	0.0053419	-45	0.006239
-186	-0.000344	-115	-0.0048271	-44	0.0000121
-185	0.0082918	-114	0.009649	-43	0.0005388
-184	-0.0014639	-113	0.0023806	-42	-0.0018999
-183	0.0011062	-112	-0.0049877	-41	0.0012111
-182	-0.000294	-111	0.0057236	-40	0.0079172
-181	-0.0009107	-110	-0.0027604	-39	0.0052968
-180	-0.0004184	-109	0.0033778	-38	-0.0019491
-179	-0.0043183	-108	0.000661	-37	0.0037781
-178	0.0053598	-107	0.0075672	-36	0.006144
-177	-0.0061916	-106	-0.0026034	-35	0.0003113
-176	-0.0012517	-105	-0.0043676	-34	0.0009358
-175	0.0048506	-104	-0.0000805	-33	-0.0040277
-174	-0.0032162	-103	0.0057787	-32	0.001374
-173	-0.0004233	-102	0.0001706	-31	-0.0042788
-172	0.005349	-101	-0.0029559	-30	0.0041063
-171	0.0051614	-100	0.0045284	-29	0.0048421
-170	0.0001425	-99	0.0050769	-28	0.0026995
-169	-0.0059441	-98	-0.0004218	-27	0.0005673

-168	0.0015333	-97	0.0010088	-26	0.0045632
-167	0.0074627	-96	0.0071849	-25	-0.0013238
-166	0.0010361	-95	0.0052391	-24	0.0048388
-165	-0.0070818	-94	-0.0060349	-23	-0.0011531
-164	-0.0024103	-93	-0.0004214	-22	0.0016049
-163	0.0060025	-92	0.0039824	-21	-0.0011929
-162	-0.0026152	-91	0.0031455	-20	0.0031561
-161	-0.0026861	-90	-0.0062733	-19	-0.0014021
-160	0.0012367	-89	0.0030518	-18	0.0084231
-159	-0.0017213	-88	0.0033488	-17	-0.0039219
-158	0.0083284	-87	0.0045251	-16	0.0091906
-157	0.0022659	-86	-0.0000257	-15	-0.0022572
-156	-0.0047726	-85	0.0040107	-14	0.0057844
-155	0.0009054	-84	0.002959	-13	0.0060537
-154	-0.0010665	-83	0.0127924	-12	-0.0038132
-153	-0.0023633	-82	0.0036556	-11	0.0015507
-152	0.0021185	-81	-0.0025221	-10	-0.0049608
-151	0.0054906	-80	-0.0032073	-9	0.0041788
-150	-0.0007612	-79	0.0000369	-8	0.0035648
-149	0.0026804	-78	0.0082998	-7	0.0038366
-148	-0.0000246	-77	-0.0084608	-6	0.0047453
-147	0.0037146	-76	0.0033658	-5	0.0059281
-146	-0.0009025	-75	-0.0023977	-4	0.0078557
-145	0.0057381	-74	0.0013185	-3	0.0025236
-144	-0.0066509	-73	-0.0038153	-2	0.0046869
-143	0.0046068	-72	0.0001159	-1	0.0145477
-142	-0.0004656	-71	0.0003457	0	-0.0000204
-141	0.0020494	-70	-0.0009868	1	0.0137002
-140	-0.0016796	-69	-0.0038104	2	0.0040907
-139	0.0035562	-68	-0.0048277	3	-0.006004
-138	0.0011151	-67	0.0027154	4	-0.0065129
-137	0.0015214	-66	-0.0006944	5	-0.0019602
-136	0.0010502	-65	-0.0075486		
-135	0.0020822	-64	0.0081945		

Appendix 2: Cumulative abnormal returns of Singapore acquirers

id	event_date	CAR(-5;-2)	CAR(-1;0)	CAR(+1;+5)
1	21/11/2007	-0.1017996	-0.0788172	0.0385182
2	04/03/2003	-0.0195341	0.0354278	-0.0750673
3	14/03/2003	-0.0457887	-0.0122179	0.0154853
4	18/06/2003	0.0359598	-0.0402097	0.0545458
5	05/03/2001	-0.1057313	0.0034029	0.0205629
6	01/03/2002	0.0071325	0.0263338	0.1509437
7	05/07/2007	0.0832136	-0.0100925	-0.1103635
8	27/10/2006	-0.1599572	0.1604042	0.0401312
9	18/10/2004	-0.0483538	0.0004394	-0.0024443
10	16/03/2007	0.0120243	-0.0031064	1.350834
11	30/11/2007	0.0027751	-0.0449001	-0.0101665
12	23/03/2001	0.0205364	0.0101305	0.0102296
13	17/09/2002	0.0237171	-0.0320375	0.0276014
14	04/05/2004	-0.0903724	0.0199408	-0.0266179
15	28/06/2002	-0.0091629	0.0434182	0.0281255
16	30/09/2005	-0.0173225	-0.0086782	0.0150431
17	19/01/2001	-0.0345246	0.0045183	0.0814421
18	07/12/2007	0.0176216	-0.0095615	0.0604288
19	10/03/2002	0.053352	-0.026007	-0.029713
20	23/05/2007	0.0258448	0.0413959	0.3193092
21	15/04/2005	0.05857	-0.0286201	-0.0450326
22	31/08/2007	0.0185314	0.0278089	-0.0245847
23	04/10/2000	-0.0047786	-0.0221399	-0.0060642
24	11/07/2006	0.0218875	-0.006717	0.0613153
25	12/11/2007	-0.0035448	-0.0116497	0.0121187
26	19/12/2003	-0.0011001	0.0566707	-0.010601
27	11/07/2005	-0.0708889	0.070342	0.0032526
28	18/04/2001	-0.0115498	0.0337004	-0.0088258
29	16/09/2004	-0.0013643	0.031588	-0.0136862
30	01/09/2006	-0.0097303	-0.0249286	0.0299812
31	19/11/2003	-0.1505859	0.0476562	-0.0253359
32	04/05/2007	-0.0823342	-0.0984489	0.0125834
33	03/07/2002	0.0072045	-0.019168	0.0120459
34	19/09/2006	0.0528757	-0.0205732	-0.0254053
35	23/11/2004	-0.0948755	0.0000736	0.2375142
36	22/11/2004	-0.0566681	0.0178457	0.0819749
37	01/12/2006	0.0317691	-0.0150922	-0.0406247
38	19/12/2002	0.6183928	0.0529629	-0.1566786
39	09/10/2000	-0.0319063	0.059787	-0.0493316

40	30/10/2001	0.0135736	-0.0258979	0.1311851
41	12/07/2002	0.1335681	0.0360892	-0.081886
42	25/01/2007	-0.0250949	0.0105377	-0.0765538
43	05/09/2000	-0.0188907	0.0225577	-0.0183628
44	18/02/2003	0.0077315	0.0347406	-0.093057
45	01/12/2004	-0.0085115	-0.0154716	0.0130075
46	15/10/2003	0.035903	0.0460099	0.0049997
47	16/01/2007	0.0487244	0.1211416	-0.1483233
48	17/10/2003	0.0421205	-0.011869	-0.0142012
49	29/07/2004	-0.0318633	-0.0307721	0.0214711
50	26/09/2003	-0.0364065	0.0246321	-0.1010728
51	16/08/2001	-0.0051921	-0.0170505	0.0000972
52	24/09/2005	0.0048211	0.1299126	-0.0209448
53	17/10/2005	-0.0070559	0.1709107	-0.115083
54	13/06/2006	-0.0831581	0.0694553	0.0374583
55	28/05/2007	-0.037979	0.0039889	0.040857
56	08/06/2005	0.1393129	-0.0409097	0.0344341
57	23/02/2007	-0.0109875	0.353634	-0.258056
58	18/10/2002	-0.0405637	-0.0141231	0.0070455
59	17/03/2004	0.0319929	0.0022367	0.0078689
60	26/10/2006	-0.0184131	-0.015471	-0.0093128
61	31/01/2001	0.0193387	0.0384679	0.0033492
62	31/07/2001	0.0033227	-0.0060393	0.0876362
63	04/08/2004	-0.0090605	0.1304478	-0.2036185
64	28/10/2004	0.0197798	0.009261	-0.031949
65	10/07/2007	-0.002606	-0.0020482	-0.0074522
66	30/10/2001	-0.0137453	0.0612274	-0.0532886
67	02/01/2004	0.0150512	-0.0139153	0.0778298
68	21/03/2007	0.0354293	0.0118612	0.027499
69	17/09/2003	0.1143288	-0.0651619	-0.106579
70	28/10/2002	0.0246322	0.0127006	0.004934
71	29/11/2004	0.0763196	0.0238924	-0.0515466
72	10/07/2007	0.0613294	0.046653	0.2483904
73	26/01/2006	0.1449376	0.0087775	0.1783202
74	09/07/2001	-0.0189398	0.019666	0.0002563
75	17/03/2005	-0.0146886	0.0252241	0.0047707
76	20/03/2002	-0.0004198	-0.0048437	0.0051364
77	25/05/2005	-0.0317947	0.0276165	0.0126367
78	23/01/2003	0.0197319	0.0014649	0.013422
79	04/06/2007	-0.0052017	0.0254476	0.0084058
80	20/01/2003	-0.0100089	0.0193581	-0.1236573
81	12/07/2000	0.1188598	0.0093469	-0.1053259
82	27/06/2002	-0.0293525	0.0174522	0.0732035

83	10/05/2005	-0.0165754	-0.0020008	0.0762987
84	17/02/2005	0.0341894	-0.0028903	-0.0072473
85	04/01/2006	-0.0071585	0.0201127	0.0986128
86	25/07/2002	0.0107694	0.0272689	-0.0860577
87	27/10/2003	0.2555552	0.0105795	-0.2508051
88	04/10/2004	0.0152467	0.0077074	0.0416512
89	14/05/2003	0.0945014	-0.0138492	-0.0309725
90	07/07/2004	0.2294908	-0.0459146	-0.1886751
91	24/08/2006	0.0219179	0.009473	-0.0404645
92	23/10/2003	-0.0124071	0.0336411	-0.0265988
93	25/06/2001	-0.0001226	-0.0037541	-0.0106885
94	27/04/2006	-0.0377402	0.0351646	-0.0338632
95	16/10/2003	0.0824154	0.008797	0.0200474
96	04/01/2006	0.1054642	-0.0364765	-0.0318129
97	30/06/2007	-0.0191892	-0.0036904	-0.0996672
98	16/11/2004	-0.0113336	-0.0146907	0.0010337
99	15/03/2005	0.0085507	-0.0075063	-0.0019317
100	21/12/2005	-0.0027624	0.4445415	-0.1068882
101	21/10/2004	-0.0176234	0.1817172	-0.1864123
102	07/06/2005	-0.2676887	-0.0052688	0.111891
103	07/11/2005	-0.0108307	-0.0084249	-0.0053688
104	22/07/2006	-0.0072003	-0.0877834	-0.0213212
105	29/08/2000	0.0935413	-0.0218403	-0.0888717
106	13/09/2002	-0.0751521	-0.0275084	0.015795
107	24/03/2003	-0.018488	0.0263997	-0.0444176
108	21/04/2006	0.039977	0.0688173	0.0187513
109	29/03/2004	-0.0007899	-0.0020005	0.0041915
110	02/11/2007	0.4445806	0.1229764	-0.134264
111	01/06/2006	0.1013558	0.0085631	0.0065626
112	17/10/2006	0.0388151	0.1023507	0.1299696
113	24/01/2007	-0.0302847	-0.0580546	0.0059345
114	09/06/2006	0.0780475	0.0031263	-0.07643
115	03/10/2005	0.032121	0.0667221	0.0814334
116	07/05/2007	-0.0096334	-0.0085458	-0.1069215
117	02/04/2006	0.1487921	0.1493768	-0.0199998
118	01/10/2007	0.0113125	0.0507656	-0.0450913
119	04/12/2002	0.0029784	-0.0482235	-0.0046485
120	26/04/2006	-0.0730392	0.0177652	-0.0671831
121	17/10/2007	-0.0201155	0.0031255	0.0082574
122	28/04/2006	-0.0236072	-0.0018881	0.0037455
123	01/10/2001	-0.0345099	0.002996	-0.0264463
124	13/07/2007	0.0841199	-0.0244271	-0.0800501
125	08/05/2007	-0.0173715	0.0568559	-0.0783177

126	15/09/2004	0.0345855	-0.0200228	0.0977192
127	07/08/2006	-0.0191942	0.0061804	-0.341119
128	13/07/2002	0.0155297	-0.0026448	0.1386934
129	14/12/2006	-0.033309	-0.0614862	0.2158482
130	02/02/2006	0.0384347	-0.0304468	-0.0300712
131	22/11/2005	0.0281141	0.0054242	-0.0186538
132	11/12/2006	-0.031142	-0.02347	-0.0795749
133	26/03/2001	0.0332006	-0.0950602	-0.1520601
134	23/09/2002	0.0007989	0.0148038	-0.0122714
135	28/09/2004	0.5018451	-0.3354321	0.1524538
136	29/05/2006	0.1946702	-0.1577715	0.3452156
137	01/08/2007	0.0013089	-0.0230788	-0.1320591
138	21/09/2004	-0.0062632	-0.0004848	0.0965556
139	08/10/2004	-0.0118819	-0.0813829	0.0296639
140	05/10/2005	0.0049996	-0.0083748	0.0035528
141	17/05/2007	0.1015589	0.0591377	0.0059046
142	25/01/2007	-0.155617	0.0077545	0.0034229
143	03/11/2000	-0.012359	0.0111516	0.0456246
144	05/07/2004	-0.0075976	0.0014244	-0.0052784
145	11/03/2006	-0.3374215	0.1632251	-0.0042961
146	24/08/2007	-0.1609585	0.050381	-0.000508
147	04/07/2002	-0.0113954	0.0021572	0.0548349
148	15/11/2001	0.3057574	-0.039477	0.2890061
149	22/10/2003	0.2408102	0.0683761	-0.0422173
150	16/06/2006	0.1899169	-0.0325354	-0.0451389
151	28/10/2007	0.0638677	-0.0637192	-0.1856913
152	24/08/2004	0.178938	-0.0514722	-0.0772462
153	15/03/2004	0.1642381	0.11103	-0.1526605
154	19/05/2006	-0.0115473	-0.0017266	-0.0320744
155	15/06/2007	-0.0150852	0.0838755	-0.0154439
156	31/01/2002	0.059002	-0.0062242	-0.1022279
157	20/01/2004	-0.0440572	-0.0129218	-0.0171057
158	19/09/2003	-0.0053853	0.144284	-0.0062646
159	07/10/2002	0.1251637	0.0904732	0.0978163
160	09/07/2004	0.1243559	0.0029586	0.018271
161	30/08/2001	-0.0045192	0.0843319	-0.1525524
162	15/07/2003	0.1504848	0.0261955	0.2111968
163	06/05/2002	0.0334905	-0.0239832	-0.0019466
164	17/08/2005	-0.0446289	0.0059917	0.1620546
165	05/10/2001	-0.0251742	0.0134297	0.0352581

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